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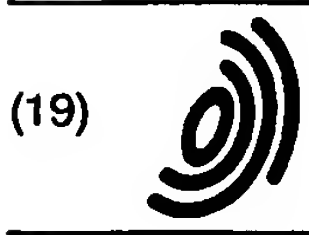
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(11) **EP 0 952 487 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
27.10.1999 Bulletin 1999/43

(51) Int. Cl.⁶: **G03D 15/00**

(21) Application number: 99107351.1

(22) Date of filing: 21.04.1999

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(72) Inventor:
**Signoretto, Roberto,
Systel International S.p.A.
Olmo di Martellago (VE) (IT)**

(30) Priority: 22.04.1998 IT VE980018

(74) Representative:
**Schwabe - Sandmair - Marx
Stuntzstrasse 16
81677 München (DE)**

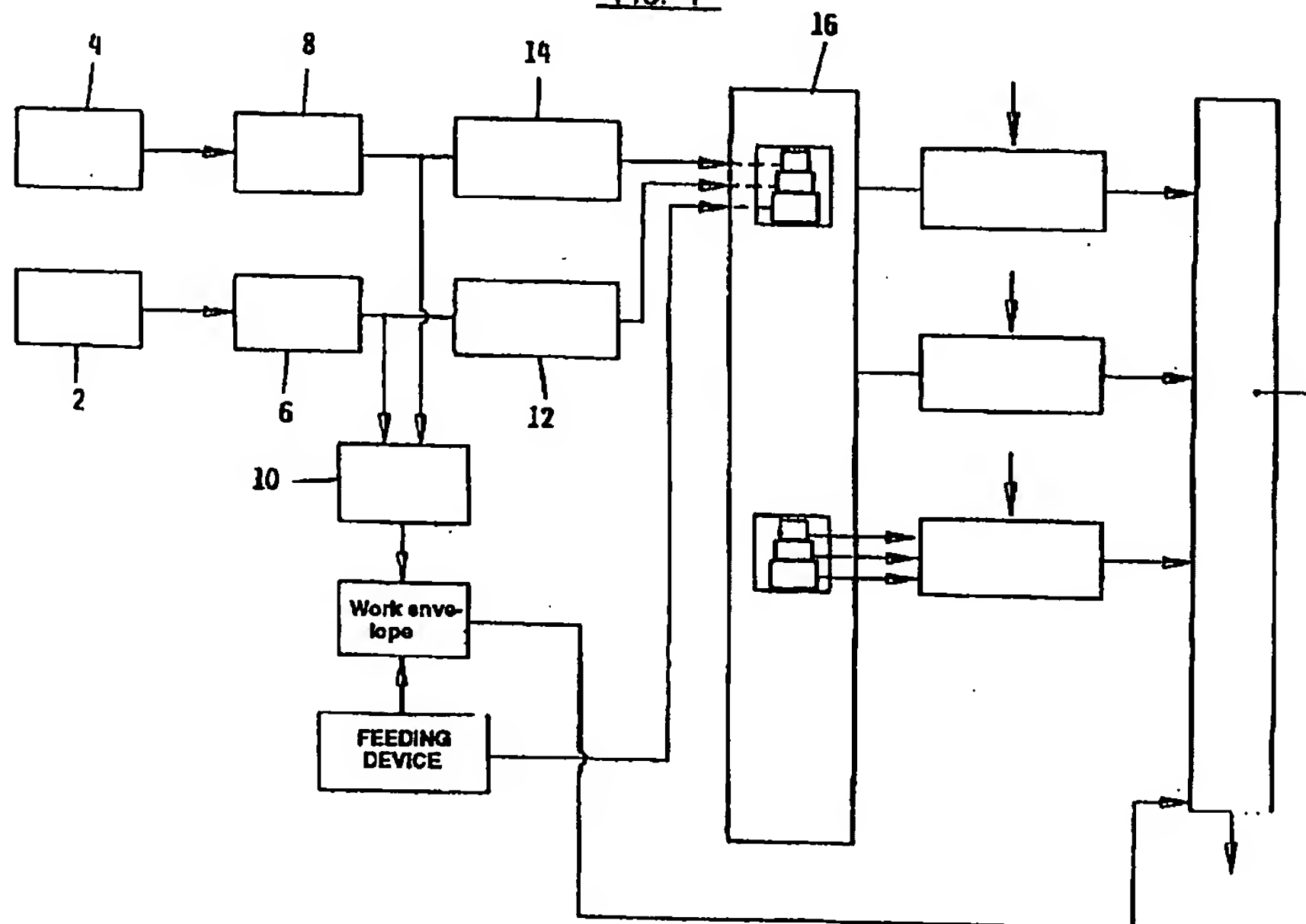
(71) Applicant:
**SYSTEL INTERNATIONAL S.p.A.
30030 Martellago (VE) (IT)**

(54) **Packaging method for photographic prints and negatives**

(57) The invention relates to a method of packaging photographic prints and negatives a prepackaging step is interposed between a step of stacking sections of negatives and prints and a step of inserting packs thus

formed in a final enclosure, such pre-packaging step consisting in wrapping each pack with a wrapping and stabilizing means for the pack itself.

FIG. 1



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Description

[0001] The present invention relates to a method of packaging prints and photographic negatives.

[0002] The current system of treating photographic material at photographic laboratories provides a peripheral organization (shops) and a centralized organization (a laboratory), which are interconnected with a view to jointly performing the complete cycle of treatment to which the photographic material is subjected. Such a cycle provides a initial collection step, at the shops, of the film cartridges which are to be subjected to developing and printing treatment, after which they are forwarded to the laboratory where such treatment is effected. To this end, appropriate work envelopes are used, into each of which the trader inserts a film cartridge and in which, subsequent to a series of data regarding the name of the client, the number of prints to be made, the format of the print as well as other characteristics on the particular "order" has been added, the film will be sent to the laboratory.

[0003] The various work envelopes which have been collected every day by the trader who is the head of a determined photographic laboratory, are then sent to the laboratory itself, which carries out the order as such in a proper way. In particular, the photographic laboratory accomplishes the following operations:

- Removes the film cartridge from the work envelope;
- Pulls the exposed film out of its enclosure or cartridge;
- Marks the work envelope and the exposed film by a suitable work code;
- Joins together the films thus marked, which are from different orders;
- Develops the tape of films which have been joined together, thus obtaining a tape of negatives;
- Prints the successive photographs disposed on the tape of negatives on a tape of photographic paper while distinguishing between the prints of each order by means of the same binary code of the respective negatives;
- Cuts the negatives of each order into film sections according to the predetermined number of photographs (e.g. four) and stacks them so as to form the pack of negatives associated with this order;
- Cuts the prints of each order, one by one, from the tape of prints and stacks them so as to form the pack of prints associated with this order;
- Inserts the pack of negatives and the pack of prints into a appropriate flexible pocket-type envelope (a wallet);
- Adds any promotion coupons, mini-albums, floppy disks etc. to the pocket-type envelope;
- Closes the pocket-type envelope and replaces it in the work envelope;
- Closes the work envelope and applies a price label which corresponds to the unit treated;

- Sends the work envelope back to the shop from which it was dispatched, for delivery to the client.

[0004] A photographic laboratory, in general, serves a wide area in which there is a large number of shops and, therefore, must be fitted out for handling a large number of orders (up to ten thousands of various orders a day), which will be made possible only by a high degree of automation in the laboratory itself, with a consistent necessity to standardize the components used (print formats, pocket-type envelopes etc.).

[0005] However, the market increasingly requires greater flexibility in product presentation which can be achieved by using different ways of packaging the present pocket-type envelopes, such as rigid plastic or cardboard boxes.

[0006] The idea of realizing machines designed for use with the different package types proves not very attractive for a photographic laboratory, as it would require high investment in products which are not, thus, widespread and would in any case necessitate short periods of redemption which conform to the life of the package itself.

[0007] On the other hand, not even the idea of creating automatic machines which are capable of handling different types of packages has proved practicable in a photographic laboratory, because of the nature of the product (sections of negatives and prints) and its tendency to bend and, thus, affect the correct formation of packs for insertion in the final package. This has hitherto led to actions aimed not only at reducing as much as possible the distance between the station where prints and films are stacked and the station where these are enveloped, but also at creating suitable channels to transport the packs of prints and negatives from the stacking station to the pockets of a package envelope, and at effecting this in a way which clearly excludes more ways of distribution from the stacking station to the different locations at which the packs of prints and negatives are inserted in different rigid packages.

[0008] It is an object of the invention to overcome this restriction and to automatically effect the packaging of negatives and prints in enclosures or envelopes which are virtually of any type and format.

[0009] This object and others which become evident from the following description are achieved according to the invention by means of a method of packaging photographic prints and negatives, comprising the steps of developing a continuous tape or film of negatives, printing them onto a continuous tape of sensitive paper, cutting the continuous tape or film of negatives into sections of photographs belonging to one and the same photographic order, cutting the continuous tape of prints belonging to one and the same photographic order, stacking the sections of negatives and prints so as to form packs for enveloping these packs, and inserting them in the final enclosure or envelope for being sent to the photo shop, characterized in that a pre-packaging

step is interposed between the step of stacking the sections of negatives and prints and the step of inserting the packs thus formed in the final enclosure or envelope, such a pre-packaging step comprising in wrapping each pack with a wrapping means and stabilizing the pack itself. The present invention is further elucidated below in two of its preferred embodiments for implementing and practising the invention, which are described only by way of example and are not limitative, with reference to the accompanying drawings, in which:

Figure 1 is a block diagram, illustrating the process of the invention according to a first embodiment, and

Figure 2 is a block diagram, illustrating the process according to a second embodiment.

[0010] As can be seen from the figures, the process of the invention relates to the final step (the packaging) of a conventional treatment effected on the negatives and prints in a photographic laboratory. In particular, after the step of printing negatives which were united to form a continuous tape or film, on a continuous tape of sensitive paper, aimed at obtaining a continuous tape of photographic prints, the two different tapes are conveyed to two cutters 2 and 4, the function of the former (2) being to cut the continuous tape or film of negatives into sections having the pre-determined number of photographs (generally four) which belong to one and the same photo order, the function of the latter (4) being to cut the continuous tape of prints into the prints belonging to the same order. The sections and prints are then conveyed to two separate stacking devices 6, 8, which two devices will form two separate packs which in case the conventional technique is adopted may be sent directly to an enveloping station 10 for insertion in two compartments which are provided in a pocket-type envelope (a wallet) and, along with this one, in the work envelope. However, unlike the conventional technique, the process of the invention also provides an alternative treatment of the two packs of negatives and prints exiting the respective stacking devices 6, 8. This operation is particularly a pre-packaging procedure which is primarily aimed at wrapping the individual packs using a wrapping means, whether partial or complete, in order to stabilize them in their configuration, irrespective of the bent shape which the negatives themselves and the prints might present, and irrespective of their tendency to be deformed when subjected to transport, manipulations etc.

[0011] This pre-packaging step may be effected at an appropriate station or preferably at two adjacent stations 12, 14 which are positioned immediately downstream of the two stacking devices 6, 8.

[0012] The pre-packaging station 12 for negatives is preferably fed by a continuous tubular tape in paper or polyethylene, into which the pack of sections containing

negatives is inserted. In the case of a paper tape, it may advantageously be printed in such a way as to constitute a module which is useful when the final client re-orders.

[0013] If this tape is then fitted with a strip which continuously extends along the side of the pocket in which the negatives have been inserted, such a strip may advantageously be equipped with an aperture, through which negatives may be stored by the end user.

[0014] The station 14 for packaging the prints is preferably fed by a continuous tape in paper or polyethylene, which is wound onto the pack of prints in order to form a partial enclosure (a wrapper) or a complete enclosure. It is even contemplated that a tubular tape, into which the pack of prints may be inserted similarly to the pack of negatives, might be used in lieu of the polyethylene tape.

[0015] The two packs which have thus been formed and stabilized in their configuration may then be conveyed together, without any risk, in the relative work envelope to the packaging station 16, where the insertion of each pack into the specific envelope, which can be of the rigid, semi-rigid type etc., will be effected. This insertion, which can be made manually, semi-automatically or automatically, is followed by the final insertion of the package thus prepared into the work envelope to undergo price-tagging and subsequent transport to the photo shop.

[0016] If any coupons or similar advertising and/or promotional articles are to be inserted into the final envelope they may be stacked along with the prints, so as to remain firmly united with them until they are delivered to the final client.

[0017] Because of the rigid or semi-rigid nature of the enclosure which can be used in lieu of the conventional flexible pocket-type envelope, it is also possible for such an enclosure to perform a function which was performed by the work envelope in the past, i.e. that of a means of transport for the prints and envelopes from the photographic laboratory to the shop for goods delivery to the final client. In this case where the said enclosure may be printed with information which conventionally was enclosed in the work envelope, a final step might be provided to protect the enclosure itself by means of a further envelope which is transparent.

[0018] In substance, the methods of this invention provides a modification of the conventional cycle of treatment which a photographic laboratory carries out on each order and, particularly, a modification which aims at interposing an intermediate step of pre-packaging (or stabilizing) between the step of stacking and the step of enveloping the two packs. If such a step of pre-packaging extends working hours and, therefore, on the one hand, seems to be contrary to the criteria usually followed in photographic laboratories of trying to minimize working hours, on the other hand, it will permit to make the subsequent packaging operations slightly more flexible, on the other, as it will then virtually be possible to

select any type of final enclosure.

[0019] The example illustrated in Figure 1 holds the conventional cycle of treatment including the packaging in flexible pocket-type envelopes (wallets) distinctly separate from the cycle of treatment including the packaging in enclosures which differ from the pocket-type envelope, and it is only for this latter cycle of treatment that the step of pre-packaging the packs of negatives and prints is provided. In contrast, the example of the invention illustrated in Figure 2 makes it possible to carry out such pre-packaging in any case, even if the packs are inserted into the flexible pocket-type envelopes. In this case, however, the pocket-type envelope represents one of the possible enclosures which can be fed to the packaging station 16.

[0020] Whatever the adopted cycle of treatment is, the advantages which can be achieved by the present invention will become obvious, and these are in particular:

- the possibility of using, in lieu of the conventional pocket-type envelope, any other enclosure of a rigid or semi-rigid type in cardboards, plastics, etc.;
- the possibility of presenting the product which is meant for the final client and, particularly, the pack of prints, in a shape which is more agreeable commercially;
- the possibility of making the link between the prints and any promotional material more stable, which prevents the client from removing it before viewing the prints;
- the possibility of utilizing, to a large extent, the facilities which presently exist in photographic laboratories, these having only to be integrated in the pre-packaging unit and in the packaging station, at the beginning of which the feeding devices for the different enclosure types are disposed;
- the possibility of eliminating the conventional work envelope as the enclosure containing the negatives and prints can be used for the same purpose, with the obvious result that the cycle of treatment becomes easier, meaning it is no longer necessary to carry along the work envelope for the duration of the treatment itself;
- the possibility of using the means of pre-packaging means as a vehicle of promotion for the photographic laboratory.

[0021] Although the present invention has been illustrated and described in two of its preferred embodiments, it is understood that variants of execution could practically be implemented without departing, however, from the scope of protection of the present patent for an industrial invention.

Claims

1. A method of packaging photographic prints and

negatives, comprising the steps of developing a continuous tape of negatives, printing them onto a continuous film of photosensitive material, cutting the continuous tape or film of negatives into sections of photographs belonging to one and the same photographic order, cutting the continuous tape or film of prints belonging to one and the same photographic order, stacking the sections of negatives and prints so as to form packs for enveloping these packs and inserting them in the final enclosure for being sent to the photo shop, characterized in that a pre-packaging step is interposed between the step of stacking the sections of negatives and prints and the step of inserting the packs thus formed in the final enclosure, such prepackaging step comprising wrapping each pack with a wrapping and stabilizing means for the pack itself.

2. A method as claimed in claim 1, characterized in that the step of pre-packaging is effected alternatively by inserting the two packs coming from the respective stacking stations directly into a conventional flexible pocket-type envelope.
3. A method as claimed in claim 1, characterized in that the pre-packaging of the prints and/or the negatives is effected by wrapping the pack thereof with a tape.
4. A method as claimed in claim 1, characterized in that the pre-packaging of the prints and/or the negatives is effected by completely wrapping the pack thereof with a sheet or foil.
5. A method as claimed in claim 1, characterized in that the pre-packaging of the prints and/or the negatives is effected by inserting the pack thereof into a pocket-type member.
6. A method as claimed in claim 1, characterized in that the pre-packaging of the negatives is effected by inserting the pack thereof into a pocket-type member, pre-printed in conformity with the needs for a re-order of the prints.
7. A method as claimed in claim 1, characterized in that the wrapping or stabilizing means is made of paper material.
8. A method as claimed in claim 1, characterized in that the wrapping or stabilizing means is made of a plastic film.
9. A method as claimed in claim 1, characterized in that the wrapping or stabilizing means is made of a transparent material.

10. A method as claimed in claim 1, characterized in

that the enclosure of the packs of negatives and prints is used in lieu of the work envelope to transport the photographic material from the photographic laboratory to the shop.

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11. A method of packaging photographic prints and negatives as claimed in claims 1 to 10 and substantially as illustrated and described.

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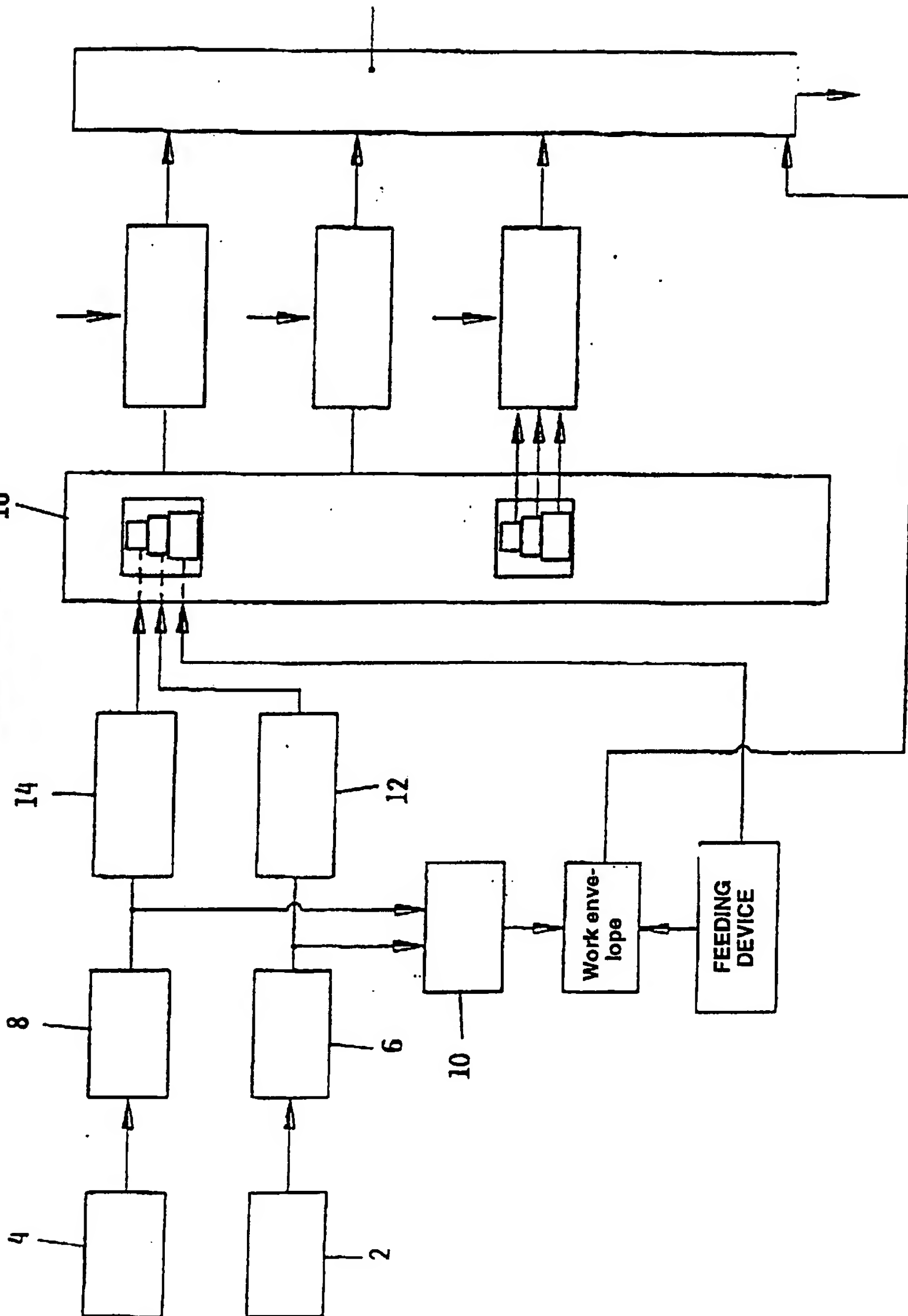
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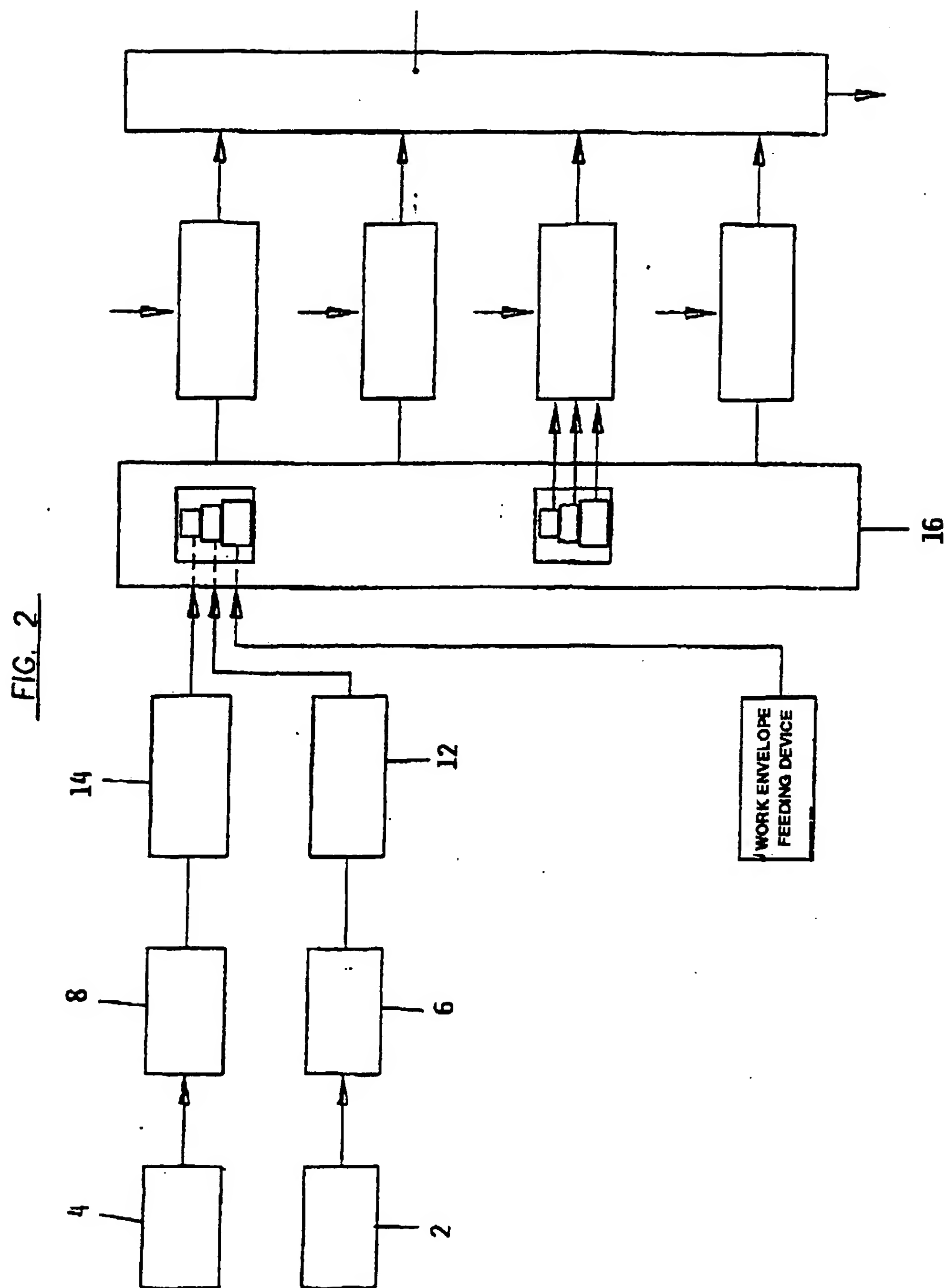
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FIG. 1







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EUROPEAN SEARCH REPORT

Application Number
EP 99 10 7351

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| | | | G03D |
| Place of search | Date of completion of the search | Examiner | |
| THE HAGUE | 28 July 1999 | Romeo, V | |
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